

MASSACHUSETTS RARE AND ENDANGERED WILDLIFE

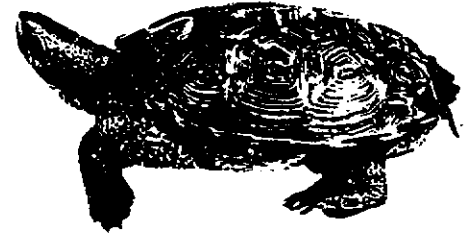
The Northern Diamondback Terrapin Malaclemys terrapin terrapin

Description

The Northern Diamondback Terrapin is a medium sized salt marsh turtle. It has a wedge shaped carapace (top shell) variably colored in ash greys, light browns, and blacks. Concentric rings pattern the pronounced shell plates often forming ridges and bumps. The bottom of the shell, the plastron, also varies in color from yellowish-gray and orange to greenish yellow. Both sexes have grayish to black skin spotted with dark green flecks. This turtle has very large, paddlelike hind feet that are strongly webbed. The adult females are much larger than the males ranging from 6-9 inches (15-23 cm). Adult males reach a length of 4-6 inches (10-15 cm). Hatchlings range from two and a half to five centimeters in length.

Range

The Northern Diamondback Terrapin is distributed along the Atlantic coast from Cape Cod, Massachusetts south to Cape Hatteras, North Carolina. Other subspecies are found along the southern Atlantic and Gulf coasts to Texas.



Habitat

Northern Diamondback Terrapins inhabit marshes which border quiet salt or brackish tidal waters. They can also be found in mud flats, shallow bays, coves, and tidal estuaries. Adjacent sandy dry upland areas are required for nesting. During the winter, the Northern Diamondback Terrapin hibernates on the bottoms of ponds, streams, and estuary channels.

Lazell, James Jr. Reptiles and Amphibians in Massachusetts, p. 25, 1972.

Feeding Habits

The Northern Diamondback Terrapin feeds on fish, crustaceans, mollusks, insects, and succulent marsh plants. It forages while floating.

Continued Overleaf



Distribution of Northern Diamondback
Terrapins



- Verified since 1978
- Reported prior to 1978

Distribution in Massachusetts by Town

Breeding and Nesting Habits

The Northern Diamondback Terrapin is polygamous (each individual may breed with several others), and mates in the water. Females are capable of retaining viable spermatozoa for up to four years without subsequent matings. After breeding, females start the trip from the water during periods of high tides to their nesting sites which are usually located on high dunes. The journey may reach up to 1600 meters and take as long as 48 hours. The female digs a nest about 5 inches deep and then deposits a clutch of approximately 10 eggs. Laying occurs twice a year, usually in May and again in August. Incubation of the eggs lasts between 87 and 108 days depending on the temperature. When the climate is unseasonably cold, hatchlings may overwinter in their nest waiting until the following April and May to erupt from the sand. It may take from 2 to 11 days after the eggs hatch for the young turtles to emerge and start the hazardous trip from the nest to the water. Part of this time is spent rotating towards the sun in what is thought to be an orientation behavior.

Comprehensive studies of Massachusetts Northern Diamondback Terrapins have revealed nesting behavior and practices atypical of more southern terrapins. On Cape Cod, Northern Diamondback Terrapins were observed nesting during both day and night and on both vegetated and unvegetated dunes in contrast to southern turtles that were reported nesting only during the day and only on vegetated dunes. Eggs laid in unvegetated areas (although more susceptible to wind erosion), receive more heat thereby decreasing incubation time. The few hatchlings that survive the immense risks of early life mature at 5 or 6 years of age.

Population Status

There are only 17 known current occurrences of the Northern Diamondback Terrapin in Massachusetts. Presently, this species is listed as Threatened by the Massachusetts Division of Fisheries and Wildlife. There are a number of factors contributing to the decline of Northern Diamondback Terrapins in the state. Originally, this species was nearly wiped out by gourmet consumption around the turn of the century. Today, the harvest of diamondbacks is illegal in Massachusetts but the species continues to experience a high nest mortality and decline in numbers caused by human made disruptions and environmental impacts. The Northern Diamondback Turtle's strongest population is located on Cape Cod where recreational activity disrupts nesting turtles and hatchlings. Off road vehicles create ruts deep enough so that the chances of migrating hatchlings getting crushed by vehicles is increased as well as their vulnerability to predation by gulls and crows. These predators have been observed standing on the edges and simply scooping up the turtles as they get caught in the ruts. Off road vehicles also interfere with nesting patterns to such an extent that the females will engage in false nesting. They head for the dunes with the intention of egg laying but turn around and go back to the water at any detection of threatening activity. This disrupts the egg laying processes and reduces the viability of the clutch by prolonging the length of time that the eggs are retained by the females. Beach goers and people walking on the dunes also have this effect as well as disrupting the sand substrate so deeply that nests are impaired due to the increased erosion which results.

An additional cause of mortality observed on Cape Cod is the infiltration into nests and eggs of rootlets from the rhizomes of dune grass. In 1978, the grass Ammophila breviligulata penetrated and surrounded half of the nests that were located on vegetated dunes. Parasitism by maggots of a Sarcophagidea fly also adversely impacts eggs and hatchlings as do mammalian predators like skunks. Reduction of salt marsh habitat and alteration of water composition due to dredging and channelization, loss of sandy beach habitats, and destruction of dune areas continue to contribute to the decline of the Northern Diamondback Terrapin in Massachusetts.